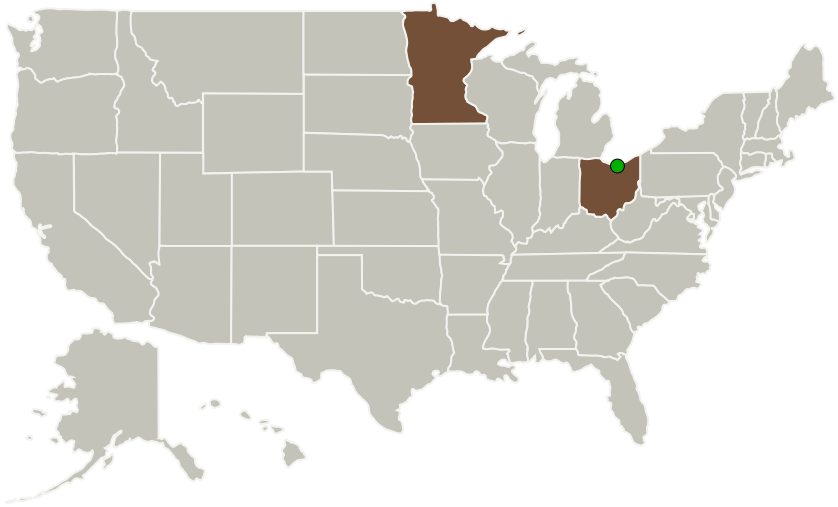
Fan Noise Screening Rig for New Open Rotor and Propeller Concepts, Phase I

Completed Technology Project (2010 - 2010)

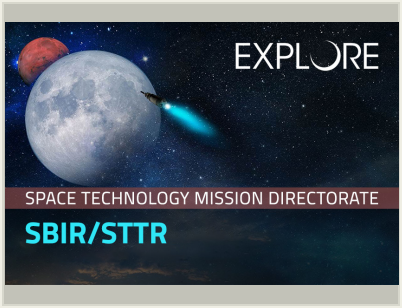
Project Introduction

Recent advancements in open rotor engine concepts warrant continued research, however the cost of wind tunnel tests is not insignificant. Because the jet noise of an open rotor engine, or even that of a geared fan, is very low in relation to the fan noise, it is evident that fan noise reduction technology is now just as important as jet noise reduction. A low cost test system is needed that would allow for comprehensive technology screening of open rotor concepts permitting more testing to be conducted at a lower overall cost. The approach to developing such a system will be to maximize the use of current technology in the selection and development of components. The first step to achieving this goal will be a design study that will include the following activities: define test criteria, further investigate drive motor and bearing technology, perform dynamic and structural analysis, define services such as power, cooling, lubrication, health monitoring, prepare fabrication estimate.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Aero Systems Engineering, Inc.	Lead Organization	Industry	St. Paul, Minnesota
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



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Primary U.S. Work Locations	
Minnesota	Ohio

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138999)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Aero Systems Engineering, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

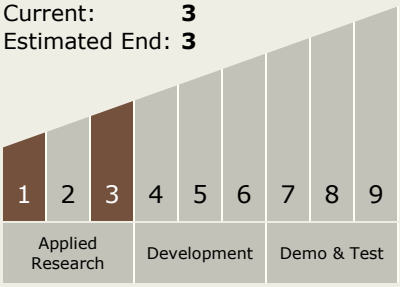
Carlos Torrez

Principal Investigator:

Robert D Week

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



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Completed Technology Project (2010 - 2010)

Technology Areas

Primary:

- TX15 Flight Vehicle Systems
  - TX15.1 Aerosciences
    - TX15.1.4 Aeroacoustics

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System